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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/697,601	10/29/2003	Serge Kurowski	200680-9001	9618

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EXAMINER	
TAI, CYRIL	

ART UNIT	PAPER NUMBER
1723	

DATE MAILED: 07/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/697,601	KUROWSKI, SERGE	
	Examiner	Art Unit	
	Cyril Tai	1723	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *18 May 2006*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-21* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-21* is/are rejected.

7)☒ Claim(s) *1* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *29 October 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☒ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date *5/18/2006*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Acknowledgment is made of applicant's claim for foreign priority based on an application filed in Belgium on 5/3/2001. It is noted, however, that applicant has not filed a certified copy of the BELGIUM 010307 application as required by 35 U.S.C. 119(b).

Claim Analysis

1. Claims 1 and 21 contain claim limitations that may be interpreted to invoke 35 U.S.C. 112, sixth paragraph, if they meet the following 3-prong analysis:

a. the claim limitations must use the phrase "means for" or "step for;"

b. the "means for" or "step for" must be modified by functional language; and

c. the phrase "means for" or "step for" must not be modified by sufficient structure, material or acts for achieving the specified function.

The following claim limitations may be interpreted to invoke 35 U.S.C. 112, sixth paragraph: "means for supporting", "means for driving" and "means for moving." It is requested that the applicant clarify whether the above claim limitations are intended to invoke 35 U.S.C. 112, sixth paragraph. For examination purposes, the above claim limitations are interpreted to not invoke 35 U.S.C. 112, sixth paragraph, thus giving it the broadest reasonable interpretation.

Claim Objections

2. Claim 1 is objected to because of the following informalities: "perfonn" is misspelled. Appropriate correction is required.

Claim Rejections - 35 USC § 103

3. The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

4. Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Rothwell (US 1,028,789) in view of Delruelle (US 2,684,158).

Regarding claim 1, Rothwell discloses a continuous fluid filtration device (p. 1, lines 8-20; Figs. 1-4), comprising:

filtration cells (1) (p. 1, line 39; Fig. 1) each having an opening (c) (Figs. 3, 4) towards its top through which they are supplied with fluid to be filtered (p. 1, lines 39-44), the cells being fitted with a filter bed (p. 1, lines 70-74) which, in filtration position of the cells allows passage of a filtrate and retention of a filtration cake, and a bottom (a) (Figs. 3, 4);

the cells being disposed in a carousel (Fig. 1) around a rotation axis (15) and each cell arranged so as to be able to pivot about a tilt axis (3) tangential to a horizontal circle having the rotation axis as its centre (Figs. 1, 2);

means for supporting (4, 5, 6, 7, 8) the filtration cells so that each cell can perform a revolution about the rotation axis (p. 1, lines 86-90; Figs. 2-4);

means for driving (9, 9a, 9b) the filtration cells in revolution about the rotation axis (p. 1, lines 90-94);

means for moving the filtration cells to cause a tilting movement thereof about their tilt axis, during their revolution about the rotation axis (p. 2, lines 35-44, Figs. 6, 7); and

means for discharging the filtrate from the cells comprising at least one outlet orifice (e) at the bottom of each cell (1) (Figs. 3, 4), a central collector (15) which is centrally arranged within the fluid filtration device (Figs. 1, 2), and connection means (13) which connect said central collector with said at least one outlet orifice at the bottom of each cell (Figs. 2-4) in said filtration position and during said tilting movement of each cell (Fig. 2) and allow a flow of the filtrate between the said at least one outlet orifice said collector (p. 1, lines 108-109; Fig. 8),

said connection means for each cell comprising a conduit (13) (Figs. 3, 4) in which, in the filtration position of the cell, no area of the conduit is lower than another area of this conduit situated downstream with respect to the flow of the filtrate (Figs. 3, 4), the conduit being arranged so as not to undergo any elongation during the tilting of the cell (Figs. 1, 2).

Rothwell fails to teach the connection means comprising a flexible conduit. Delruelle teaches a continuous fluid filtration device (Figs. 1, 2) comprising filtration cells (1) disposed in a carousel (col. 3, lines 71-75), an outlet (32) at the bottom of each cell (Fig. 5), a central collector (42, 43) and a flexible conduit (41). Delruelle teaches flexible conduits, which are capable of twisting action, such that: (a) opposite ends of conduits may be securely attached to the bottom of filtration cells and to central collector, so a more complete seal may be effected to prevent leakage of liquid or air, (b) the flexibility

of the conduit permit true rotation of the central collector, (c) rigid tolerances required in the manufacture of the central collector need not be applied to the remainder of the filter structure (col. 6, lines 27-43 of Delruelle). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention in view of the teachings of Delruelle to modify the conduits in the continuous fluid filtration device of Rothwell such that they are flexible.

Regarding claim 2, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell teaches in a radial section passing through the device, the flexible conduit (13) in the filtration position of the cell extends downwards from an outlet orifice (e) along a substantially vertical axis (Figs. 3, 4) and the flexible conduit in tilting position of the cell extends substantially horizontally (Fig. 2) from the outlet orifice (e) as far as the tilt axis. Rothwell does not explicitly teach the flexible conduit (13) in the filtration position is angled in the direction of the collector so as to continuously have a downward slope and the flexible conduit in tilting position is angled in the direction of the collector.

It would have been obvious to have had the conduit in the filtration position of the cell extend downwards from an outlet orifice along a substantially vertical axis and then, at a height lower than the tilt axis, is angled in the direction of the collector so as to continuously have a downward slope, in order to allow fluid to drain under the aid of gravity. It would also have been obvious to have had the conduit in tilting position of the cell extends substantially horizontally from the outlet orifice as far as the tilt axis, and is

then angled in the direction of the collector, in order to avoid unnecessary stretching of conduit when it is in the tilting position and also allow fluid to drain under the aid of gravity.

In addition, claim 2 does not further limit the structure of the flexible conduit. The arrangement of the flexible conduit is directed towards function/use rather than structure. Since Rothwell and Delruelle teach the flexible conduit, which is capable of being arranged as discussed above, the structure anticipates the claimed arrangements of the flexible conduit.

Regarding claim 3, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell and Delruelle do not explicitly disclose a device according to claim 3, characterised in that the tilt axis is supported in at least one bearing having a first outside diameter D1, in that the flexible conduit has a second outside diameter D2 and in that the distance between the tilt axis and the substantially vertical axis of the flexible conduit is equal to or greater than 0 and less than or equal to D1+D2.

However, it would have been obvious to have had the tilt axis is supported in at least one bearing having a first outside diameter D1, in that the flexible conduit has a second outside diameter D2 and in that the distance between the tilt axis and the substantially vertical axis of the flexible conduit is equal to or greater than 0 and less than or equal to D1+D2, because the conduit would have to be stretched in order to be in the tilting position. Stretching the conduit would be undesirable, as it would put

unnecessary tension on the conduit, which would result in early failure of the conduit, such as cracks and tears.

Regarding claim 4, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell also teaches that the substantially vertical axis is, in the said radial section, situated between the tilt axis and the rotation axis (Figs. 3, 4).

Regarding claim 5, Rothwell and Delruelle disclose a device according to claim 3 as discussed above. Rothwell also teaches that the substantially vertical axis is, in the said radial section, situated between the tilt axis and the rotation axis (Figs. 3, 4).

Regarding claim 6, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell also teaches that each cell is supported on a shaft (3) coaxial with the tilt axis so as to be able to pivot about this axis (Figs. 3, 4).

Regarding claim 7, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell also teaches that each cell is supported on a shaft (3) coaxial with the tilt axis so as to be able to pivot about this axis (Figs. 3, 4).

Regarding claim 8, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell also teaches that each cell is supported on two shaft

ends (11, 12) coaxial with each other and coaxial with the tilt axis so as to be able to pivot about this axis (Figs. 3, 4).

Regarding claim 9, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell also teaches that each cell is supported on two shaft ends (11, 12) coaxial with each other and coaxial with the tilt axis so as to be able to pivot about this axis (Figs. 3, 4).

Regarding claim 10, Rothwell and Delruelle disclose a device according to claim 3 as discussed above. Rothwell also teaches that each cell is supported on two shaft ends (11, 12) coaxial with each other and coaxial with the tilt axis so as to be able to pivot about this axis (Figs. 3, 4).

Regarding claim 11, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell also teaches that it comprises a support (3a, 3b) for each flexible conduit which turns about the rotation axis simultaneously with the filtration cells (Figs. 3, 4).

Regarding claim 12, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell also teaches that it comprises a support (3a, 3b) for each flexible conduit which turns about the rotation axis simultaneously with the filtration cells (Figs. 3, 4).

Regarding claim 13, Rothwell and Delruelle disclose a device according to claim 3 as discussed above. Rothwell also teaches that it comprises a support (3a, 3b) for each flexible conduit which turns about the rotation axis simultaneously with the filtration cells (Figs. 3, 4).

Regarding claim 14, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell also teaches that the collector (15) is connected to a source of negative pressure which the flexible conduits connected to the filtration cells in the filtration position communicate to them, below their filter bed (p. 2, lines 7-12), and in that the collector is also a distributor connected to a source of pressurised gas which the flexible conduits connected to the filtration cells in the tilted position communicate to them, in order to assist with the detachment of the filtration cake from the filter bed (p. 2, lines 15-25, 87-95).

Regarding claim 15, Rothwell and Delruelle disclose a device according to claim 2 as discussed above. Rothwell also teaches that the collector (15) is connected to a source of negative pressure which the flexible conduits connected to the filtration cells in the filtration position communicate to them, below their filter bed (p. 2, lines 7-12), and in that the collector is also a distributor connected to a source of pressurised gas which the flexible conduits connected to the filtration cells in the tilted position

communicate to them, in order to assist with the detachment of the filtration cake from the filter bed (p. 2, lines 15-25, 87-95).

Regarding claim 16, Rothwell and Delruelle disclose a device according to claim 3 as discussed above. Rothwell also teaches that the collector (15) is connected to a source of negative pressure which the flexible conduits connected to the filtration cells in the filtration position communicate to them, below their filter bed (p. 2, lines 7-12), and in that the collector is also a distributor connected to a source of pressurised gas which the flexible conduits connected to the filtration cells in the tilted position communicate to them, in order to assist with the detachment of the filtration cake from the filter bed (p. 2, lines 15-25, 87-95).

Regarding claim 17, Rothwell and Delruelle disclose a device according to claim 1 as discussed above. Rothwell also teaches that the aforementioned tilting movement means comprises a roller (10b) (Figs. 1-3) arranged on each cell so as to be able to turn freely about a pivot axis (10a), and a guide rail (30) (Figs. 1, 6) arranged fixedly at one point on the filtration device so as to receive the roller of each driven filtration cell and to guide it so as to cause the said tilting movement of the cell (p. 2, lines 35-44).

Regarding claim 18, Rothwell and Delruelle disclose a device according to claim 17 as discussed above. Rothwell also teaches that the pivot axis (10a) of each roller

(10b) is situated in a plane passing through the rotation axis of the device and perpendicular to the tilt axis of the filtration cell corresponding to the roller (Figs. 1-3).

Regarding claim 19, Rothwell and Delruelle disclose a device according to claim 17 as discussed above. Rothwell also teaches that the roller (10b) is carried by the cell at an internal end thereof (Fig. 1-3).

Regarding claim 20, Rothwell and Delruelle disclose a device according to claim 17 as discussed above. Rothwell also teaches that the guide rail (30) is disposed above the filtration cells so as to form a U in a plan view, comprising a central part and two lateral branches, the filtration surface of the cell being in an approximately vertical position when the roller reaches the central part of the U (Figs. 1, 2, 6).

Regarding claim 21, Rothwell and Delruelle disclose a continuous fluid filtration device, comprising:

filtration cells (1) (p. 1, line 39; Fig. 1) each having an opening (c) (Figs. 3, 4) towards its top through which they are supplied with fluid to be filtered (p. 1, lines 39-44), the cells being fitted with a filter bed (p. 1, lines 70-74) which, in the filtration position of the cells allows passage of a filtrate and retention of a filtration cake, and a bottom (a) (Figs. 3, 4);

the cells being disposed in a carousel (Fig. 1) around a rotation axis (15) and each cell arranged so as to be able to pivot about a tilt axis (3) tangential to a horizontal circle having the rotation axis as its centre (Figs. 1, 2);

means for supporting (4, 5, 6, 7, 8) the filtration cells so that each cell can perform a revolution about the rotation axis (p. 1, lines 86-90; Figs. 2-4);

means for driving (9, 9a, 9b) the filtration cells in revolution about the rotation axis (p. 1, lines 90-94);

means for moving the filtration cells to cause a tilting movement thereof about their tilt axis, during their revolution about the rotation axis (p. 2, lines 35-44, Figs. 6, 7); and

means for discharging the filtrate from the cells comprising at least one outlet orifice (e) at the bottom of each cell (1) (Figs. 3, 4), a central collector (15) and connection means (13) allowing flow of the filtrate between the said at least one outlet orifice and the collector (p. 1, lines 108-109; Fig. 8);

said connection means for each cell comprising a conduit (13) (Figs. 3,4) in which, in the filtration position of the cell, no area of the flexible conduit is lower than another area of this conduit situated downstream with respect to the flow of the filtrate, the flexible conduit being arranged so as not to undergo any elongation during the tilting of the cell (Figs. 1, 2), and,

in a radial section passing through the device, the flexible conduit (13) in the filtration position of the cell extends downwards from an outlet orifice (e) along a

substantially vertical axis (Figs. 3, 4) and the flexible conduit in tilting position of the cell extends substantially horizontally (Fig. 2) from the outlet orifice (e) as far as the tilt axis.

Rothwell fails to teach the connection means comprising a flexible conduit. Delruelle teaches a continuous fluid filtration device (Figs. 1, 2) comprising filtration cells (1) disposed in a carousel (col. 3, lines 71-75), an outlet (32) at the bottom of each cell (Fig. 5), a central collector (42, 43) and a flexible conduit (41). Delruelle teaches flexible conduits, which are capable of twisting action, such that: (a) opposite ends of conduits may be securely attached to the bottom of filtration cells and to central collector, so a more complete seal may be effected to prevent leakage of liquid or air, (b) the flexibility of the conduit permit true rotation of the central collector, (c) rigid tolerances required in the manufacture of the central collector need not be applied to the remainder of the filter structure (col. 6, lines 27-43 of Delruelle). Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention in view of the teachings of Delruelle to modify the conduits in the continuous fluid filtration device of Rothwell such that they are flexible.

Rothwell does not explicitly teach the flexible conduit (13) in the filtration position is angled in the direction of the collector so as to continuously have a downward slope and the flexible conduit in tilting position is angled in the direction of the collector.

It would have been obvious to have had the conduit in the filtration position of the cell extend downwards from an outlet orifice along a substantially vertical axis and then, at a height lower than the tilt axis, is angled in the direction of the collector so as to continuously have a downward slope, in order to allow fluid to drain under the aid of

gravity. It would also have been obvious to have had the conduit in tilting position of the cell extends substantially horizontally from the outlet orifice as far as the tilt axis, and is then angled in the direction of the collector, in order to avoid unnecessary stretching of conduit when it is in the tilting position and also allow fluid to drain under the aid of gravity.

In addition, these limitations on the flexible conduit do not further structurally limit. The arrangement of the flexible conduit is directed towards function rather than structure. Since the device of Rothwell and Delruelle teach the flexible conduit, which is capable of being arranged as discussed above, the structure anticipates the claimed arrangements of the flexible conduit.

Response to Arguments

5. Applicant's arguments with respect to claims 1, 6, 8, 14, and 17-19 have been considered but are moot in view of the new ground(s) of rejection.

Conclusion

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cyril Tai whose telephone number is (571) 272-1495. The examiner can normally be reached on Monday-Friday from 9:00AM to 5:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker can be reached on (571) 272-1151. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Cyril Tai
Examiner
Art Unit 1723

CT
6/22/2006

TERRY K. COIL
PRIMARY EXAMINER